

## Message

**From:** Sargeant, Kathryn [sargeant.kathryn@epa.gov]  
**Sent:** 5/23/2017 8:33:39 PM  
**To:** Hengst, Benjamin [Hengst.Benjamin@epa.gov]; Burch, Julia [Burch.Julia@epa.gov]; Charmley, William [charmley.william@epa.gov]; Schenk, Ruth [schenk.ruth@epa.gov]; Samulski, Michael [samulski.michael@epa.gov]; Manning, Bryan [manning.bryan@epa.gov]; Hoyer, Marion [hoyer.marion@epa.gov]; Parsons, Christy [Parsons.Christy@epa.gov]; Machiele, Paul [machiele.paul@epa.gov]; Burkholder, Dallas [burkholder.dallas@epa.gov]  
**CC:** Simon, Karl [Simon.Karl@epa.gov]; Cook, Leila [cook.leila@epa.gov]  
**Subject:** Heads-up: Next steps in SAB Review of Fall 2016 Reg Agenda  
**Attachments:** SAB Review for 2018 RFS annual rule otaq final2.docx; EPA action description Aircraft GHG rule otaq final2.docx; EPA action description\_Aviation Lead Endangerment otaq final2.docx

# Ex. 5 - Deliberative Process

**From:** Sargeant, Kathryn  
**Sent:** Wednesday, January 25, 2017 4:46 PM  
**To:** Shoaff, John <Shoaff.John@epa.gov>  
**Cc:** Mazza, Carl <Mazza.Carl@epa.gov>; Hockstad, Leif <Hockstad.Leif@epa.gov>; Burch, Julia <Burch.Julia@epa.gov>; Hengst, Benjamin <Hengst.Benjamin@epa.gov>; Schenk, Ruth <schenk.ruth@epa.gov>; Charmley, William <charmley.william@epa.gov>  
**Subject:** OTAQ Submission: Fall 2016 Reg Agenda SAB Review Templates

Attached please find OTAQ's three submissions, as you requested.  
 These have been reviewed within OTAQ and by OGC.  
 Please let me know if you have any questions or feedback you'd like us to consider.

**From:** Shoaff, John  
**Sent:** Wednesday, January 04, 2017 1:04 PM  
**To:** Sargeant, Kathryn <sargeant.kathryn@epa.gov>; Rimer, Kelly <Rimer.Kelly@epa.gov>  
**Cc:** Mazza, Carl <Mazza.Carl@epa.gov>; Hockstad, Leif <Hockstad.Leif@epa.gov>  
**Subject:** FW: Happy Holidays and a few things for the new year -- Fall 2016 Reg Agenda SAB Review Templates due 1/25

Kathryn and Kelly,

Happy new year! I wanted to follow up on my note below and before the holidays though apologies Kelly, I missed you on the distribution.

Ex. 5 - Deliberative Process

# Ex. 5 - Deliberative Process

welcome to join the call at 9:30 as you like **Ex. 6 - Personal Privacy** or we can do our best to relay current thinking to the best we can or follow up as needed. **Ex. 5 - Deliberative Process**

*reference notions in italics.*

# Ex. 5 - Deliberative Process

Let me know your preference – joining call and/or us relaying notions above with your additions please. If there are others we should include on this, happy to forward or feel free to pass. Thank you!

John

**JOHN SHOAFF** | LEADER, POLICY SUPPORT GROUP  
OFFICE OF AIR POLICY & PROGRAM SUPPORT (OAPPS)  
OFFICE OF AIR & RADIATION | U.S. EPA | WJC NORTH 5442-B  
1200 PENNSYLVANIA AVE. NW | MC 6103A | WASHINGTON, D.C. | 20460 | USA  
[Shoaff.john@epa.gov](mailto:Shoaff.john@epa.gov) | 1-202-564-0531 DIRECT | 1-202-257-1755 MOBILE

**From:** Shoaff, John

**Sent:** Thursday, December 22, 2016 2:31 PM

**To:** Hubbell, Bryan <[Hubbell.Bryan@epa.gov](mailto:Hubbell.Bryan@epa.gov)>; Moltzen, Michael <[Moltzen.Michael@epa.gov](mailto:Moltzen.Michael@epa.gov)>; Sargeant, Kathryn <[sargeant.kathryn@epa.gov](mailto:sargeant.kathryn@epa.gov)>; Cook, Rich <[Cook.Rich@epa.gov](mailto:Cook.Rich@epa.gov)>; Birnbaum, Rona <[Birnbaum.Rona@epa.gov](mailto:Birnbaum.Rona@epa.gov)>; Bacanskas, Lisa <[Bacanskas.Lisa@epa.gov](mailto:Bacanskas.Lisa@epa.gov)>; Kolb, Laura <[Kolb.Laura@epa.gov](mailto:Kolb.Laura@epa.gov)>

**Cc:** Koerber, Mike <[Koerber.Mike@epa.gov](mailto:Koerber.Mike@epa.gov)>; Hengst, Benjamin <[Hengst.Benjamin@epa.gov](mailto:Hengst.Benjamin@epa.gov)>; Cook, Leila <[cook.leila@epa.gov](mailto:cook.leila@epa.gov)>; Krieger, Jackie <[Krieger.Jackie@epa.gov](mailto:Krieger.Jackie@epa.gov)>; Gitlin, Bonnie <[Gitlin.Bonnie@epa.gov](mailto:Gitlin.Bonnie@epa.gov)>; DeMocker, Jim <[DeMocker.Jim@epa.gov](mailto:DeMocker.Jim@epa.gov)>; Mazza, Carl <[Mazza.Carl@epa.gov](mailto:Mazza.Carl@epa.gov)>; Hockstad, Leif <[Hockstad.Leif@epa.gov](mailto:Hockstad.Leif@epa.gov)>

**Subject:** Happy Holidays and a few things for the new year -- Fall 2016 Reg Agenda SAB Review Templates due 1/25

All,

Hope all have a safe and nice holiday not to mention a well-deserved break if you're so inclined. Wanted to relay a few quick updates in follow-up to my missive toward the end of November with all that was approaching this month. –

# Ex. 5 - Deliberative Process

# Ex. 5 - Deliberative Process

John

JOHN SHOAFF | LEADER, POLICY SUPPORT GROUP  
OFFICE OF AIR POLICY & PROGRAM SUPPORT (OAPPS)  
OFFICE OF AIR & RADIATION | U.S. EPA | WJC NORTH 5442-B  
1200 PENNSYLVANIA AVE. NW | MC 6103A | WASHINGTON, D.C. | 20460 | USA  
[Shoaff.John@epa.gov](mailto:Shoaff.John@epa.gov) | 1-202-564-0531 DIRECT | 1-202-257-1755 MOBILE

---

**From:** Carpenter, Thomas

**Sent:** Tuesday, December 13, 2016 4:55 PM

**To:** Fegley, Robert <[Fegley.Robert@epa.gov](mailto:Fegley.Robert@epa.gov)>; Cogliano, Gerain <[Cogliano.Gerain@epa.gov](mailto:Cogliano.Gerain@epa.gov)>; Chun, Melissa <[Chun.Melissa@epa.gov](mailto:Chun.Melissa@epa.gov)>; Mazza, Carl <[Mazza.Carl@epa.gov](mailto:Mazza.Carl@epa.gov)>; Williams, Pat <[Williams.Pat@epa.gov](mailto:Williams.Pat@epa.gov)>; Evalenko, Sandy <[Evalenko.Sandy@epa.gov](mailto:Evalenko.Sandy@epa.gov)>; Owens, Nicole <[Owens.Nicole@epa.gov](mailto:Owens.Nicole@epa.gov)>; Muellerleile, Caryn <[Muellerleile.Caryn@epa.gov](mailto:Muellerleile.Caryn@epa.gov)>; Mazza, Carl <[Mazza.Carl@epa.gov](mailto:Mazza.Carl@epa.gov)>; Shoaff, John <[Shoaff.John@epa.gov](mailto:Shoaff.John@epa.gov)>

**Cc:** Sheppard, Tracy <[Sheppard.Tracy@epa.gov](mailto:Sheppard.Tracy@epa.gov)>; Zarba, Christopher <[Zarba.Christopher@epa.gov](mailto:Zarba.Christopher@epa.gov)>; Johnston, Khanna <[Johnston.Khanna@epa.gov](mailto:Johnston.Khanna@epa.gov)>; Brennan, Thomas <[Brennan.Thomas@epa.gov](mailto:Brennan.Thomas@epa.gov)>

**Subject:** Fall 2016 Reg Agenda SAB Review Templates due 6/24

Greetings,

# Ex. 5 - Deliberative Process

the best practices for developing and sharing information with the SAB for the this process. I have attached a PDF of that document for your convenience.

Attached is a word version of the annotated template for you to complete. Please provide your Office's completed templates to me by February 1, 2017. The SAB Staff Office will convene the Work Group as soon as possible after materials are provided.

## **Ex. 5 - Deliberative Process**

# **Ex. 5 - Deliberative Process**

## Appointment

**From:** Audette, Lucie [audette.lucie@epa.gov]  
**Sent:** 9/6/2016 7:45:09 PM  
**To:** Audette, Lucie [audette.lucie@epa.gov]; Manning, Bryan [manning.bryan@epa.gov]; Thrift, Mike [thrift.mike@epa.gov]; Schillo, Bruce [Schillo.Bruce@epa.gov]; Jantarasami, Lesley [Jantarasami.Lesley@epa.gov]; Benner, Tim [Benner.Tim@epa.gov]; Griffiths, Charles [Griffiths.Charles@epa.gov]; Ayres, Sara [Ayres.Sara@epa.gov]; Dutton, Steven [Dutton.Steven@epa.gov]; McDow, Stephen [McDow.Stephen@epa.gov]; Castro, Marina [Castro.Marina@epa.gov]; Birkett, Daniel [Birkett.Daniel@epa.gov]; Powell, Alan [Powell.Alan@epa.gov]; Aspy, Dale [Aspy.Dale@epa.gov]; Aumann, Ethan [Aumann.Ethan@epa.gov]; Russ, Michael [russ.michael@epa.gov]; Maeroff, Bruce [Maeroff.Bruce@epa.gov]; Leggett, Cullen [Leggett.Cullen@epa.gov]  
**CC:** Samulski, Michael [samulski.michael@epa.gov]; Klaus, Dan [Klaus.Dan@epa.gov]; Brooks, Phillip [Brooks.Phillip@epa.gov]; Chapman, Apple [Chapman.Apple@epa.gov]; Belser, Evan [Belser.Evan@epa.gov]  
**Subject:** Aircraft GHG Emissions Standards - WORKGROUP KICKOFF  
**Attachments:** Agency Action.pdf; Final Aircraft GHG Findings of Endangerment and Contribution August 15 2016.pdf; Fact Sheet.pdf; Workgroup Kickoff Mtg. Aircraft GHG Standards NPRM 9-13-16final.pptx  
**Location:** N. 125 Ann Arbor Call in number: **Ex. 6 - Personal Privacy**  
**Start:** 9/14/2016 5:00:00 PM  
**End:** 9/14/2016 6:00:00 PM  
**Show Time As:** Tentative

In preparation for our workgroup kickoff meeting tomorrow, I have attached briefing materials we will walk through during the meeting. Lucie



Workgroup Kickoff  
Mtg\_Aircraft GH...

Hello everyone,

Welcome to the Aircraft GHG Emissions Standards Workgroup! Thank-you for agreeing to be part of this rulemaking workgroup which I will be chairing. Bryan Manning is the alternate workgroup chair. I've done a busy search of your calendars for September 14 and almost everyone is available for our kick-off meeting scheduled for September 14, 1-2 pm.

**Ex. 6 - Personal Privacy**

I've also attached a few documents including the tiering form, final Findings and fact sheet to provide you an overview of this proposed action which follows on our final endangerment and cause or contribute finding for aircraft GHG emissions which was published on August 15<sup>th</sup> in the Federal Register. Please feel free to me prior to our first meeting if you have any questions. I will be sending a separate agenda next week prior to our meeting.

Again, thank you for your participation and I look forward to our first meeting next week. Lucie



Agency Action.pdf



Final Aircraft GHG  
Findings of Enda...



Fact Sheet.pdf

Message

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**From:** Manning, Bryan [manning.bryan@epa.gov]  
**Sent:** 6/25/2015 5:22:29 PM  
**To:** Audette, Lucie [audette.lucie@epa.gov]  
**CC:** Leggett, Cullen [Leggett.Cullen@epa.gov]  
**Subject:** RE: Comments on FA's Draft briefing paper for Janet/Rich and WH  
**Attachments:** FAA-EPA CO2 Standard briefing\_ 24 June 2015\_epa+BM comments.docx

Nice job on the comments, Lucie. See my additional revisions and comment boxes. Let's talk soon.

Thank you,

Bryan

Bryan Manning  
U.S. EPA Office of Transportation and Air Quality  
Large Marine and Aviation Center  
2000 Traverwood Drive  
Ann Arbor, MI 48105  
(ph) 734-214-4832 (fax) 734-214-4816  
[manning.bryan@epa.gov](mailto:manning.bryan@epa.gov)

---

**From:** Audette, Lucie  
**Sent:** Thursday, June 25, 2015 11:18 AM  
**To:** Manning, Bryan  
**Subject:** Comments on FA's Draft briefing paper for Janet/Rich and WH

Bryan, I had a lot of comments... Sorry! See what you think and then let's discuss any concerns/questions you may have. A number of items need to

Message

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**From:** Manning, Bryan [manning.bryan@epa.gov]  
**Sent:** 6/25/2015 4:05:56 PM  
**To:** Leggett, Cullen [Leggett.Cullen@epa.gov]  
**Subject:** FW: Comments on FA's Draft briefing paper for Janet/Rich and WH  
**Attachments:** FAA-EPA CO2 Standard briefing\_ 24 June 2015\_epa comments.docx

See below/attached from Lucie, Cullen. Let's talk soon. Thanks.

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**From:** Audette, Lucie  
**Sent:** Thursday, June 25, 2015 11:18 AM  
**To:** Manning, Bryan  
**Subject:** Comments on FA's Draft briefing paper for Janet/Rich and WH

Bryan, I had a lot of comments... Sorry! See what you think and then let's discuss any concerns/questions you may have. A number of items need to



**To:** Manning, Bryan[manning.bryan@epa.gov]; Audette, Lucie[audette.lucie@epa.gov]  
**From:** Thrift, Mike  
**Sent:** Thur 9/1/2016 6:15:23 PM  
**Subject:** RE: For Review: Regulatory Agenda Inputs  
Reg Agenda Entry v2+BM+mt.docx

Have a number of comments/edits/questions in the attached,

**From:** Manning, Bryan  
**Sent:** Thursday, September 01, 2016 9:15 AM  
**To:** Audette, Lucie <audette.lucie@epa.gov>; Thrift, Mike <thrift.mike@epa.gov>  
**Subject:** RE: For Review: Regulatory Agenda Inputs

Thank you, Lucie. Attached please find a few minor comments. Should we run this by Mike Thrift?

Thanks again,

Bryan

Bryan Manning

U.S. EPA Office of Transportation and Air Quality

Large Marine and Aviation Center

2000 Traverwood Drive

Ann Arbor, MI 48105

(ph) 734-214-4832 (fax) 734-214-4816

[manning.bryan@epa.gov](mailto:manning.bryan@epa.gov)

**From:** Audette, Lucie

**Sent:** Thursday, September 01, 2016 11:56 AM

**To:** Manning, Bryan <[manning.bryan@epa.gov](mailto:manning.bryan@epa.gov)>; Thrift, Mike <[thrift.mike@epa.gov](mailto:thrift.mike@epa.gov)>

**Subject:** For Review: Regulatory Agenda Inputs

## Ex. 5 - Attorney Client

**To:** Audette, Lucie[audette.lucie@epa.gov]; Williams, Melina[Williams.Melina@epa.gov]; Orlin, David[Orlin.David@epa.gov]  
**Cc:** Manning, Bryan[manning.bryan@epa.gov]  
**From:** Thrift, Mike  
**Sent:** Wed 7/20/2016 7:02:17 PM  
**Subject:** RE: Updated Aircraft Materials

# Ex. 5 - Attorney Client

**From:** Audette, Lucie  
**Sent:** Wednesday, July 20, 2016 11:43 AM  
**To:** Thrift, Mike <thrift.mike@epa.gov>; Williams, Melina <Williams.Melina@epa.gov>  
**Cc:** Manning, Bryan <manning.bryan@epa.gov>  
**Subject:** FW: Updated Aircraft Materials

Hi Mike and Melina,

## **Ex. 5 - Attorney Client**

## **Ex. 5 - Attorney Client**

## **Ex. 5 - Attorney Client**

Question: **Ex. 5 - Attorney Client**

In the Q & A document we currently have a questions about existing aircraft:

## **Ex. 5 - Attorney Client**

**From:** Birgfeld, Erin  
**Sent:** Wednesday, July 20, 2016 11:17 AM  
**To:** DeLuca, Isabel <[DeLuca.Isabel@epa.gov](mailto:DeLuca.Isabel@epa.gov)>; Jantarasami, Lesley <[Jantarasami.Lesley@epa.gov](mailto:Jantarasami.Lesley@epa.gov)>; Audette, Lucie <[audette.lucie@epa.gov](mailto:audette.lucie@epa.gov)>  
**Cc:** Manning, Bryan <[manning.bryan@epa.gov](mailto:manning.bryan@epa.gov)>; Hengst, Benjamin <[Hengst.Benjamin@epa.gov](mailto:Hengst.Benjamin@epa.gov)>; Sutton, Tia <[sutton.tia@epa.gov](mailto:sutton.tia@epa.gov)>; Millett, John <[Millett.John@epa.gov](mailto:Millett.John@epa.gov)>  
**Subject:** Updated Aircraft Materials

Hi all,

## Ex. 5 - Deliberative Process

Thank you everyone. Soooooooo close!

Erin Birgfeld

Communications Director

Office of Transportation and Air Quality

U.S. EPA

202-564-6741 (work)

202-255-4434 (cell)

Work Schedule: 9-5:30 daily; Flexiplace every Thursday (call 202-255-4434 to reach me on Thursdays).

**To:** Manning, Bryan[manning.bryan@epa.gov]  
**Cc:** Audette, Lucie[audette.lucie@epa.gov]; Samulski, Michael[samulski.michael@epa.gov]  
**From:** Thrift, Mike  
**Sent:** Thur 3/31/2016 7:12:53 PM  
**Subject:** RE: Bill Charmley comment: sect II of aircraft GHG endang FRM (PLEASE REVIEW)

Bill's edits are fine by me, thanks, Bryan.

**From:** Manning, Bryan  
**Sent:** Thursday, March 31, 2016 12:06 PM  
**To:** Thrift, Mike <thrift.mike@epa.gov>  
**Cc:** Audette, Lucie <audette.lucie@epa.gov>; Samulski, Michael <samulski.michael@epa.gov>  
**Subject:** Bill Charmley comment: sect II of aircraft GHG endang FRM (PLEASE REVIEW)

Hello Mike,

**Ex. 5 - Attorney Client**

**Ex. 5 - Attorney Client**

## **Ex. 5 - Attorney Client**

Thanks,

Bryan

Bryan Manning

U.S. EPA Office of Transportation and Air Quality

Large Marine and Aviation Center

2000 Traverwood Drive

Ann Arbor, MI 48105

(ph) 734-214-4832 (fax) 734-214-4816

[manning.bryan@epa.gov](mailto:manning.bryan@epa.gov)



**To:** Jantarasami, Lesley[Jantarasami.Lesley@epa.gov]; Orlin, David[Orlin.David@epa.gov]; Greenglass, Nora[Greenglass.Nora@epa.gov]; Williams, Melina[Williams.Melina@epa.gov]  
**Cc:** Gunning, Paul[Gunning.Paul@epa.gov]; Sarofim, Marcus[Sarofim.Marcus@epa.gov]; Manning, Bryan[manning.bryan@epa.gov]  
**From:** Thrift, Mike  
**Sent:** Tue 7/19/2016 5:45:16 PM  
**Subject:** RE: USDA review of draft RTC on biogenic issue

## Ex. 5 - Attorney Client

**From:** Jantarasami, Lesley  
**Sent:** Tuesday, July 19, 2016 10:43 AM  
**To:** Orlin, David <Orlin.David@epa.gov>; Greenglass, Nora <Greenglass.Nora@epa.gov>; Thrift, Mike <thrift.mike@epa.gov>; Williams, Melina <Williams.Melina@epa.gov>  
**Cc:** Gunning, Paul <Gunning.Paul@epa.gov>; Sarofim, Marcus <Sarofim.Marcus@epa.gov>; Manning, Bryan <manning.bryan@epa.gov>  
**Subject:** RE: USDA review of draft RTC on biogenic issue

## Ex. 5 - Attorney Client

## Ex. 5 - Attorney Client

**From:** Jantarasami, Lesley

**Sent:** Tuesday, July 19, 2016 1:32 PM

**To:** Orlin, David <[Orlin.David@epa.gov](mailto:Orlin.David@epa.gov)>; Greenglass, Nora <[Greenglass.Nora@epa.gov](mailto:Greenglass.Nora@epa.gov)>; Thrift, Mike <[thrift.mike@epa.gov](mailto:thrift.mike@epa.gov)>; Melina Williams ([Williams.Melina@epa.gov](mailto:Williams.Melina@epa.gov)) <[Williams.Melina@epa.gov](mailto:Williams.Melina@epa.gov)>

**Cc:** Gunning, Paul <[Gunning.Paul@epa.gov](mailto:Gunning.Paul@epa.gov)>; Marcus Sarofim <[Sarofim.Marcus@epa.gov](mailto:Sarofim.Marcus@epa.gov)>; Bryan Manning ([manning.bryan@epa.gov](mailto:manning.bryan@epa.gov)) <[manning.bryan@epa.gov](mailto:manning.bryan@epa.gov)>

**Subject:** USDA review of draft RTC on biogenic issue

**Importance:** High

Hello OGC,

## Ex. 5 - Attorney Client

Thanks,

Lesley

Lesley Jantarasami

U.S. EPA, Climate Change Division

[jantarasami.lesley@epa.gov](mailto:jantarasami.lesley@epa.gov)

(202)-343-9929

**To:** Manning, Bryan[manning.bryan@epa.gov]  
**Cc:** Williams, Melina[Williams.Melina@epa.gov]; Jantarasami, Lesley[Jantarasami.Lesley@epa.gov]; Maeroff, Bruce[Maeroff.Bruce@epa.gov]  
**From:** Thrift, Mike  
**Sent:** Tue 10/27/2015 9:38:32 PM  
**Subject:** RE: Boeing mtg on Oct 23 in Ann Arbor: Docket Materials??

## Ex. 5 - Attorney Client

Mike Thrift

United States Environmental Protection Agency

Office of General Counsel

San Diego Border Office

610 West Ash Street

San Diego, CA 92101

Thrift.mike@epa.gov

619-321-1960

**From:** Manning, Bryan  
**Sent:** Tuesday, October 27, 2015 2:06 PM  
**To:** Thrift, Mike <thrift.mike@epa.gov>  
**Cc:** Williams, Melina <Williams.Melina@epa.gov>; Jantarasami, Lesley <Jantarasami.Lesley@epa.gov>; Maeroff, Bruce <Maeroff.Bruce@epa.gov>  
**Subject:** Boeing mtg on Oct 23 in Ann Arbor: Docket Materials??

Hello Mike,

# **Ex. 5 - Attorney Client**

Thank you,

Bryan

P.S. For this meeting, Boeing requested to meet with Bill Charmley et al.

Bryan Manning

U.S. EPA Office of Transportation and Air Quality

Large Marine and Aviation Center

2000 Traverwood Drive

Ann Arbor, MI 48105

(ph) 734-214-4832 (fax) 734-214-4816

[manning.bryan@epa.gov](mailto:manning.bryan@epa.gov)

**To:** Audette, Lucie[audette.lucie@epa.gov]  
**Cc:** Manning, Bryan[manning.bryan@epa.gov]  
**From:** Thrift, Mike  
**Sent:** Thur 1/29/2015 8:16:35 PM  
**Subject:** RE: Need Your Review: Summary Language addressing FAA concern

# Ex. 5 - Attorney Client

Mike Thrift

United States Environmental Protection Agency

Office of General Counsel

San Diego Border Office

610 West Ash Street

San Diego, CA 92101

Thrift.mike@epa.gov

619-321-1960

**From:** Audette, Lucie  
**Sent:** Thursday, January 29, 2015 11:47 AM  
**To:** Thrift, Mike  
**Cc:** Manning, Bryan  
**Subject:** Need Your Review: Summary Language addressing FAA concern

# Ex. 5 - Attorney Client

# **Ex. 5 - Attorney Client**

**To:** Manning, Bryan[manning.bryan@epa.gov]  
**Cc:** Williams, Melina[Williams.Melina@epa.gov]; Orlin, David[Orlin.David@epa.gov]; Jantarasami, Lesley[Jantarasami.Lesley@epa.gov]  
**From:** Thrift, Mike  
**Sent:** Thur 2/2/2017 10:48:29 PM  
**Subject:** RE: aircraft GHG standard NPRM (section summarizing August 2016 findings)

# Ex. 5 - Attorney Client

**From:** Manning, Bryan  
**Sent:** Thursday, February 02, 2017 2:21 PM  
**To:** Thrift, Mike <thrift.mike@epa.gov>  
**Subject:** aircraft GHG standard NPRM (section summarizing August 2016 findings)

# Ex. 5 - Attorney Client

# Ex. 5 - Attorney Client

Thanks,

Bryan

Bryan Manning

U.S. EPA Office of Transportation and Air Quality

Large Marine and Aviation Center

2000 Traverwood Drive

Ann Arbor, MI 48105

(ph) 734-214-4832 (fax) 734-214-4816

[manning.bryan@epa.gov](mailto:manning.bryan@epa.gov)



**To:** Manning, Bryan[manning.bryan@epa.gov]  
**From:** Samulski, Michael  
**Sent:** Tue 9/29/2015 7:35:23 PM  
**Subject:** new version  
FAA-OST Breifing-ICAO CO2 Standard 2015-09-28 final review draft - epa comments2.docx

\*\*\*\*\*

Michael Samulski

U.S. Environmental Protection Agency

Office of Transportation and Air Quality

Director, Large Marine and Aircraft Center

1 (734) 214-4532

samulski.michael@epa.gov

\*\*\*\*\*

**To:** Hoyer, Marion[hoyer.marion@epa.gov]; Manning, Bryan[manning.bryan@epa.gov]  
**Cc:** Pedde, Meredith[pedde.meredith@epa.gov]  
**From:** Davidson, Ken  
**Sent:** Wed 6/17/2015 4:21:10 PM  
**Subject:** RE: EPA proposal to regulate aircraft emissions: chemitrails calls

Hi Marion,

## Ex. 5 - Deliberative Process

Ken

Kenneth Davidson

U.S. Environmental Protection Agency

Office of Transportation and Air Quality/Region 9 Air Division

75 Hawthorne St. (AIR-6)

San Francisco, CA 94105

Phone: 415-972-3633

FAX: 415-947-3583

**From:** Hoyer, Marion  
**Sent:** Wednesday, June 17, 2015 5:50 AM  
**To:** Davidson, Ken; Manning, Bryan  
**Cc:** Pedde, Meredith  
**Subject:** RE: EPA proposal to regulate aircraft emissions: chemitrails calls

Hi Ken,

## Ex. 5 - Deliberative Process

**From:** Davidson, Ken

**Sent:** Tuesday, June 16, 2015 7:06 PM

**To:** Manning, Bryan; Hoyer, Marion

**Subject:** FW: EPA proposal to regulate aircraft emissions: chemitrails calls

Hey there,

## Ex. 5 - Deliberative Process

I also thought the feedback on the phone line was interesting. Have you received any feedback on the utility of the hotline?

Ken

Kenneth Davidson

U.S. Environmental Protection Agency

Office of Transportation and Air Quality/Region 9 Air Division

75 Hawthorne St. (AIR-6)

San Francisco, CA 94105

Phone: 415-972-3633

FAX: 415-947-3583

**From:** SHOJI, KERRY

**Sent:** Tuesday, June 16, 2015 3:58 PM

**To:** Davidson, Ken

**Cc:** Glenn, William; COHEN, Deborra; Holoubek, Helga; BANDROWSKI, MIKE

**Subject:** RE: EPA proposal to regulate aircraft emissions: chemitrails calls

## Ex. 5 - Deliberative Process

--Kerry

**From:** Davidson, Ken

**Sent:** Tuesday, June 16, 2015 3:48 PM

**To:** SHOJI, KERRY

**Cc:** Glenn, William; COHEN, Deborra; Holoubek, Helga; BANDROWSKI, MIKE

**Subject:** RE: EPA proposal to regulate aircraft emissions: chemitrails calls

Hi Kerry,

## **Ex. 5 - Deliberative Process**

formation. Let me know if you have any questions!

Ken

Kenneth Davidson

U.S. Environmental Protection Agency

Office of Transportation and Air Quality/Region 9 Air Division

75 Hawthorne St. (AIR-6)

San Francisco, CA 94105

Phone: 415-972-3633

FAX: 415-947-3583

**From:** SHOJI, KERRY  
**Sent:** Tuesday, June 16, 2015 3:21 PM  
**To:** Davidson, Ken  
**Cc:** Glenn, William; COHEN, Deborra; Holoubek, Helga  
**Subject:** EPA proposal to regulate aircraft emissions: chemitrails calls

Hi Ken,

## Ex. 5 - Deliberative Process

--Kerry Shoji

Kerry L. Shoji, MLIS

Librarian (contractor, ASRC Primus)

U.S. EPA Region 9 Library/ 75 Hawthorne Street/ San Francisco, CA 94105-3920

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415-972-3695 phone

415-947-3533 fax

<http://www.epa.gov/region9/library>

**To:** Audette, Lucie[audette.lucie@epa.gov]  
**Cc:** Manning, Bryan[manning.bryan@epa.gov]  
**From:** Samulski, Michael  
**Sent:** Thur 10/30/2014 3:59:45 PM  
**Subject:** RE: Draft Note for Bill/Mike to Send Lourdes  
Note to Lourdes.docx

Thanks for drafting this. I made a few edits, basically related to personal style, which are in the attachment in track changes

\*\*\*\*\*

Michael Samulski

U.S. Environmental Protection Agency

Office of Transportation and Air Quality

Director, Large Marine and Aircraft Center

1 (734) 214-4532

samulski.michael@epa.gov

\*\*\*\*\*

**From:** Audette, Lucie  
**Sent:** Thursday, October 30, 2014 11:25 AM  
**To:** Samulski, Michael  
**Cc:** Manning, Bryan  
**Subject:** Draft Note for Bill/Mike to Send Lourdes

DRAFT NOTE:

Hello Lourdes,

## **Ex. 5 - Deliberative Process**



**To:** Audette, Lucie[audette.lucie@epa.gov]; Manning, Bryan[manning.bryan@epa.gov]; Samulski, Michael[samulski.michael@epa.gov]  
**Cc:** Orlin, David[Orlin.David@epa.gov]  
**From:** Thrift, Mike  
**Sent:** Tue 10/24/2017 11:04:26 PM  
**Subject:** RE: Revised Mandy Briefing: Aircraft CO2 rule (TIME SENSITIVE)  
Briefing Aircraft CO2 Rule 10-23-17v2 lca+mt.pptx

All—

See my edits in blue on slides 2, 8 and 15 of the attached,

## Ex. 5 - Attorney Client

Ex. 5 - Attorney Client

**From:** Audette, Lucie  
**Sent:** Tuesday, October 24, 2017 7:54 AM  
**To:** Manning, Bryan <manning.bryan@epa.gov>; Samulski, Michael <samulski.michael@epa.gov>; Thrift, Mike <thrift.mike@epa.gov>  
**Subject:** RE: Revised Mandy Briefing: Aircraft CO2 rule (TIME SENSITIVE)

Bryan, I made some suggested edits to the schedule slide.

**From:** Manning, Bryan  
**Sent:** Tuesday, October 24, 2017 10:46 AM  
**To:** Samulski, Michael <samulski.michael@epa.gov>; Thrift, Mike <thrift.mike@epa.gov>; Audette, Lucie <audette.lucie@epa.gov>  
**Subject:** Revised Mandy Briefing: Aircraft CO2 rule (TIME SENSITIVE)

Hi Mike Samulski, Mike Thrift, and Lucie,

Attached please find a revised briefing for Mandy (aircraft CO2 rule) that incorporates the feedback from the pre-brief for Sarah yesterday. See red and strikeout font for the revisions. Note, these changes can be found on slides #1, 2, 5, 8, and 9. Slide #2 includes the new summary bullet of the CBD litigation history, which Lucie drafted. Slide #9 now includes interim milestones for the rule schedule (more detailed schedule). Let me know if you have any comments.

Thank you,

Bryan

Bryan Manning

U.S. EPA Office of Transportation and Air Quality

Large Marine and Aviation Center

2000 Traverwood Drive

Ann Arbor, MI 48105

(ph) 734-214-4832 (fax) 734-214-4816

[manning.bryan@epa.gov](mailto:manning.bryan@epa.gov)

**To:** Audette, Lucie[audette.lucie@epa.gov]; Manning, Bryan[manning.bryan@epa.gov]; Samulski, Michael[samulski.michael@epa.gov]  
**From:** Thrift, Mike  
**Sent:** Tue 10/17/2017 10:51:18 PM  
**Subject:** RE: Draft Briefing for Mandy on aircraft CO2 rule (TIME SENSITIVE)  
Briefing Aircraft CO2 Std for Mandy Gunasekara 10-17-17 lca+mt.pptx

And here are my comments, added to Lucie's.

**Ex. 5 - Attorney Client**

Ex. 5 - Attorney Client

My suggested adds and strikes are in Bruin blue.

**From:** Audette, Lucie  
**Sent:** Tuesday, October 17, 2017 2:23 PM  
**To:** Manning, Bryan <manning.bryan@epa.gov>; Samulski, Michael <samulski.michael@epa.gov>; Thrift, Mike <thrift.mike@epa.gov>  
**Subject:** RE: Draft Briefing for Mandy on aircraft CO2 rule (TIME SENSITIVE)

Hello everyone,

**Ex. 5 - Deliberative Process**

**Ex. 5 - Deliberative Process**

Take a look and see what you think.

**Ex. 6 - Personal Privacy**

**Ex. 6 - Personal Privacy**

**From:** Manning, Bryan  
**Sent:** Tuesday, October 17, 2017 4:38 PM  
**To:** Samulski, Michael <samulski.michael@epa.gov>; Thrift, Mike <thrift.mike@epa.gov>; Audette, Lucie <audette.lucie@epa.gov>  
**Subject:** Draft Briefing for Mandy on aircraft CO2 rule (TIME SENSITIVE)

Hi Lucie, Mike Samulski, and Mike Thrift,

**Ex. 5 - Deliberative Process**

Thanks,

Bryan

Bryan Manning

U.S. EPA Office of Transportation and Air Quality

Large Marine and Aviation Center

2000 Traverwood Drive

Ann Arbor, MI 48105

(ph) 734-214-4832 (fax) 734-214-4816

[manning.bryan@epa.gov](mailto:manning.bryan@epa.gov)

**To:** charmley.william@epa.gov[charmley.william@epa.gov]  
**From:** Samulski, Michael  
**Sent:** Tue 6/23/2015 4:55:31 PM  
**Subject:** FW: Call with Lourdes  
Summary of Issues ICAO CO2 Standard 6-22-15.docx

Here is the issues table that I mentioned yesterday.

Mike

\*\*\*\*\*

Michael Samulski

U.S. Environmental Protection Agency

Office of Transportation and Air Quality

Director, Large Marine and Aircraft Center

1 (734) 214-4532

samulski.michael@epa.gov

\*\*\*\*\*

**From:** Samulski, Michael  
**Sent:** Monday, June 22, 2015 4:24 PM  
**To:** charmley.william@epa.gov  
**Subject:** Call with Lourdes

Bill,

On Friday, we talked about our plans through the White House meeting. One of the steps we

discussed was to have you call Lourdes

**Ex. 5 - Deliberative Process**

# Ex. 5 - Deliberative Process

[Lourdes.Maurice@faa.gov](mailto:Lourdes.Maurice@faa.gov)

Work 202-267-3576

**Ex. 6 - Personal Privacy**

Thanks,

Mike

\*\*\*\*\*

Michael Samulski

U.S. Environmental Protection Agency

Office of Transportation and Air Quality

Director, Large Marine and Aircraft Center

1 (734) 214-4532

[samulski.michael@epa.gov](mailto:samulski.michael@epa.gov)

\*\*\*\*\*

**To:** Zawacki, Margaret[zawacki.margaret@epa.gov]  
**From:** Yen, David  
**Sent:** Mon 3/21/2016 6:09:19 PM  
**Subject:** RE: additional questions about aircraft emissions  
[CAEP-Analysis Flow Chart.pptx](#)

Hi Molly,

Here are two ppt slides showing the current ICAO (International Civil Aviation Organization) – CAEP (Committee on Aviation Environmental Protection) cost-benefit analysis flow chart and where the proposed air quality modeling and climate/health benefit analysis could fit in. Hope they will be helpful for today's discussions.

Talk to you soon.

Best,

David

**From:** Zawacki, Margaret  
**Sent:** Thursday, March 17, 2016 6:54 AM  
**To:** Yen, David <Yen.David@epa.gov>  
**Cc:** Davidson, Ken <Davidson.Ken@epa.gov>  
**Subject:** RE: additional questions about aircraft emissions

Hi David,

Thanks, your email helps clarify things for me. It sounds like the next step is an exploratory, staff-level meeting, with you and me and Ken and some folks from Ed's group. I can set up a meeting for us to start brainstorming and we can see where we need to go next. I just started poking around calendars and it looks like next Monday afternoon works – let me know if that is too soon.



Molly

**From:** Yen, David  
**Sent:** Wednesday, March 16, 2016 10:31 AM  
**To:** Zawacki, Margaret <[zawacki.margaret@epa.gov](mailto:zawacki.margaret@epa.gov)>  
**Subject:** RE: additional questions about aircraft emissions

Hi Molly

Thank you for following up our previous conversation on air quality analysis. Yes, I am curious about what it takes to do an air quality analysis (e.g., using CMAQ) to quantify benefits for our rules (specifically aircraft CO2 and non-volatile PM rules).

**Ex. 5 - Deliberative Process**

## Ex. 5 - Deliberative Process

**Ex. 5 - Deliberative Process**

We are considering all options but have not made any decision on if and how we are going to supplement our existing cost effectiveness analysis with additional cost benefit analysis. Talking to you, at least to me, is a first step in finding out what it takes to include an air quality impact assessment.

From our conversation, I understand that air quality analysis requires all the pollutants be modelled together to establish a baseline. The impact of a sector like aviation or any stringency scenarios applied to the sector will then be added to the baseline to show the difference between with and without their contributions. I also understand that the sector's contribution has to be in a form of emissions produced by the sector under a specific scenario in either local, regional or global scale. Currently, all the aviation air quality assessments are based on local (LTO near airports) emissions. However, moving forward, many GHG and aerosol effects are either global or regional. There are interests to include in-flight emissions in addition to LTO in the analysis.

## Ex. 5 - Deliberative Process

**Ex. 5 - Deliberative Process** You mentioned that Ed's group (AQMC) is responsible for the mobile source inventories, OAQPS is responsible for the photochemical modeling and your group (HEBTC) is responsible for putting it all together, making sure everything fits for the analyzed scenario and monetizing the benefits. That seems to me requires a lot of coordination and a great

deal of efforts to get things orchestrated in working order.

Since we don't have a decision to go ahead yet, I think it would be best if we can keep things simple. If you think it's appropriate, I don't mind to get introduced to a few key players in these various groups and start the brainstorm for what can and cannot be done. Also after talking to Bryan, he had mentioned that Ken Davidson had been involved in reviewing the FAA/MIT cost benefit analysis and could contribute and help this scoping discussion as well.

Best regards,

David Yen

Assessment and Standards Division

Office of Transportation and Air Quality

U.S. Environmental Protection Agency

2000 Tarverwood Drive

Ann Arbor, MI 48105

Office phone: (734)214-4103

Email: [yen.david@epa.gov](mailto:yen.david@epa.gov)

**From:** Zawacki, Margaret

**Sent:** Monday, March 14, 2016 3:35 PM

**To:** Yen, David <[Yen.David@epa.gov](mailto:Yen.David@epa.gov)>

**Subject:** additional questions about aircraft emissions

Hi David,

I've been thinking some about our conversation last week. Here's how I understand your interest, please let me know if I get it wrong! You are interested in exploring what it would take to potentially do an air quality modeling analysis for the upcoming aircraft PM rule. As part of that air quality modeling analysis you're interested in seeing whether we could incorporate in-flight emissions into the inventory. As of now the air quality modeling platform that we use for national scale analyses for our regulations only includes landing and take-off emissions, not in-flight emissions.

The first step to take towards a potential air quality modeling analysis that would include in-flight emissions would be to take the "heat maps" of flight patterns and convert those into a gridded inventory that could be used by a national scale photochemical model. I don't think this would be a trivial amount of work but discussing that question would need to include Ed Nam's Air Quality and Modeling Center as they have responsibility for mobile source inventories. The Office of Air Quality, Planning and Standards (OAQPS – our sister office) holds the expertise in maintaining and running national scale photochemical models. My center, the Health Effects, Benefits, and Toxics Center, works closely with OAQPS on all air quality modeling analyses for OTAQ regulations. We make sure that they have all the inventory inputs they need and interpret and present air quality modeling results, and use the air quality modeling results to model monetized benefits of a rule.

If it ends up that an air quality modeling analysis with currently existing aircraft inventories – only landing and take-off, not in-flight – is needed then we could start to explore timing and cost with OAQPS. If you'd like more exploration of incorporating in-flight emissions into an inventory and eventually an air quality modeling analysis I can work with you to ID the right people to include from Ed's center.

Hope this is helpful! Let me know if you have questions - Molly

Molly Zawacki

US EPA Office of Transportation and Air Quality  
Assessment and Standards Division  
2000 Traverwood Drive

Ann Arbor, MI 48105  
Phone: 734.214.4472

Available:

Mondays and Wednesdays 8:30 to 5

Tuesdays and Thursdays 6 to 2:30

**To:** Zawacki, Margaret[zawacki.margaret@epa.gov]  
**From:** Yen, David  
**Sent:** Thur 3/17/2016 2:01:47 PM  
**Subject:** RE: additional questions about aircraft emissions

Okay, let's do Monday at 3 since we do want Ken in the meeting. Cullen is in Rome this week for ICAO Working Group 3 meetings. We can bring him up to speed later. Thanks.

**From:** Zawacki, Margaret  
**Sent:** Thursday, March 17, 2016 9:51 AM  
**To:** Yen, David <Yen.David@epa.gov>  
**Subject:** RE: additional questions about aircraft emissions

Ken's calendar is busy Tuesday afternoon but it looks like Monday at 3 would work for everyone (you, me, Ken, Harvey Michaels, Sarah Roberts, and Bryan) except Cullen. I'm not sure about Cullen, his calendar shows that he isn't working on Monday or Tuesday afternoon.

**From:** Yen, David  
**Sent:** Thursday, March 17, 2016 9:14 AM  
**To:** Zawacki, Margaret <zawacki.margaret@epa.gov>  
**Cc:** Davidson, Ken <Davidson.Ken@epa.gov>; Manning, Bryan <manning.bryan@epa.gov>; Leggett, Cullen <Leggett.Cullen@epa.gov>  
**Subject:** RE: additional questions about aircraft emissions

Hi Molly,

It would be great if you don't mind setting up an initial meeting. Looking at my calendar, next Tuesday afternoon (any time) would be better for us. I would like to invite Bryan Manning and Cullen Leggett from my group (Large Marine and Aviation center). If you can invite Ken and Ed's folks, that would be super.

Thanks,

David

**From:** Zawacki, Margaret  
**Sent:** Thursday, March 17, 2016 6:54 AM  
**To:** Yen, David <[Yen.David@epa.gov](mailto:Yen.David@epa.gov)>  
**Cc:** Davidson, Ken <[Davidson.Ken@epa.gov](mailto:Davidson.Ken@epa.gov)>  
**Subject:** RE: additional questions about aircraft emissions

Hi David,

Thanks, your email helps clarify things for me. It sounds like the next step is an exploratory, staff-level meeting, with you and me and Ken and some folks from Ed's group. I can set up a meeting for us to start brainstorming and we can see where we need to go next. I just started poking around calendars and it looks like next Monday afternoon works – let me know if that is too soon.

Molly

**From:** Yen, David  
**Sent:** Wednesday, March 16, 2016 10:31 AM  
**To:** Zawacki, Margaret <[zawacki.margaret@epa.gov](mailto:zawacki.margaret@epa.gov)>  
**Subject:** RE: additional questions about aircraft emissions

Hi Molly

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**Ex. 5 - Deliberative Process**

## **Ex. 5 - Deliberative Process**

# **Ex. 5 - Deliberative Process**

**Ex. 5 - Deliberative Process****Ex. 5 - Deliberative Process**

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**Ex. 5 - Deliberative Process****Ex. 5 - Deliberative Process**

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Best regards,

David Yen

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Ann Arbor, MI 48105

Office phone: (734)214-4103

Email: [yen.david@epa.gov](mailto:yen.david@epa.gov)

**From:** Zawacki, Margaret  
**Sent:** Monday, March 14, 2016 3:35 PM  
**To:** Yen, David <[Yen.David@epa.gov](mailto:Yen.David@epa.gov)>  
**Subject:** additional questions about aircraft emissions

Hi David,

I've been thinking some about our conversation last week. Here's how I understand your interest, please let me know if I get it wrong! You are interested in exploring what it would take to potentially do an air quality modeling analysis for the upcoming aircraft PM rule. As part of that air quality modeling analysis you're interested in seeing whether we could incorporate in-flight emissions into the inventory. As of now the air quality modeling platform that we use for national scale analyses for our regulations only includes landing and take-off emissions, not in-flight emissions.

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and present air quality modeling results, and use the air quality modeling results to model monetized benefits of a rule.

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Molly Zawacki

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Ann Arbor, MI 48105  
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